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USSR PLAN FOR MEDICAL RESEARCH, 1953

A.I. Nesterov, Acad-Secy
Acad Med Sci USSR

In drawing up a plan of scientific research work for 1953, the Presidium of the Academy of Medical Sciences USSR and the Presidium of the Scientific Council, Ministry of Public Health USSR, were guided by the directives of the 19th Congress of the Communist Party of the Soviet Union. The decisions and resolutions of various scientific conferences held in 1951 - 1952 were also taken into consideration. These included the Conference on Cellular and Non-cellular Living Matter, the Conference on Problems of Neuromorphology, expanded meetings of the Presidium of the Academy of Medical Sciences USSR at which the problems of the formation of bacterial species and of silicosis were discussed, etc.

The State Plan for 1953 comprises 45 problems. The problem of the philosophical foundations of Pavlov's theory was combined with that dealing with the physiology and pathology of higher nervous activity, while the problem of rickettsiae diseases has been detached from the general problem of viruses and virus- and rickettsiae-caused diseases. A number of problems have been formulated in a slightly different manner. In formulating the problems of influenza, of malignant neoplasms, hypertension, tuberculosis, traumatic injuries, etc., emphasis was placed on prophylaxis.

At the Division of Physiology of the Institute of Experimental Medicine, the Institute of Pediatry, the Institute of Physiology, the Institute of Obstetrics and Gynecology, the Institute of Neurosurgery imeni Academician N. N. Burdenko (all institutes of the Academy of Medical Sciences USSR), and the Institute of the Brain of the Ministry of Public Health USSR, valuable work has been done in the fields of neurology as well as physiology and pathology of higher nervous activity. However, much of the research conducted in this general field lacks both theoretical and practical significance. The Seventh Session of the Academy of Medical Sciences USSR pointed out that there is inadequate coordination between neuromorphological investigations and physiological research.

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In the subdivision of physiology and pathology of higher nervous activity, the following four lines of research will be pursued in 1953: (1) physiology and pathology of higher nervous activity; (2) investigation of the second signal system and of its interaction with the first signal system; (3) physiology and pathology of higher nervous activity in its dependence on age and on the ontogenesis of physiological functions; and (4) investigation of the functional relationships between the cerebral cortex and internal organs under normal and pathological conditions and the role of the nervous system in restoring impaired functions. In regard to the fourth line of research, work will be done on the following special problems: (1) the mechanism of the effect exerted by higher divisions of the central nervous system on the functioning of internal organs; (2) interrelationships between higher divisions of the central nervous system and internal organs as they affect the physiology and pathology of blood circulation and respiration; (3) participation of interorecepters in the development of pathological processes; (4) the role of the nervous system in immunobiological reactions of the organism; (5) cortical regulation of the activity of endocrine glands; and (6) the physiological basis of the therapeutic effect of factors involved in physical therapy and health resort treatments.

In the subdivision of general and special mechanisms of pathological processes and of experimental therapy, the initial changes suggested by the joint session of the Academy of Sciences USSR and the Academy of Medical Sciences USSR and by the Scientific Council on Problems of I. P. Pavlov's Physiological Teaching, Academy of Medical Sciences USSR, were made in 1952. Some of these changes deal with work on the effect exerted by higher nervous activity on the development of pathological processes, the study of restorative compensatory processes involved in the effects of therapeutic sleep on various diseases (chorea, gas gangrene, hypertension, etc.), and the application of the conditioned-reflex method for the treatment of pathological conditions. During 1952, a new experimental model of pneumonia was created by A. M. Chernukh at the Institute of General and Experimental Pathology, Academy of Medical Sciences USSR. However, the organization of work in this subdivision is still inadequate at the principal institute engaged in this work, i.e., the Institute of General and Experimental Pathology.

The following investigations have been planned for 1953 within the scope of this work:

1. Investigation of compensatory mechanisms in experimentally produced pathological conditions of the heart, lungs, stomach, and kidneys. This work will be done by the Institute of General and Experimental Pathology, the Institute of Physiology, the Institute of Surgery imeni A. V. Vishnevskiy, and the Institute of Therapy.

2. The role of divisions of higher nervous activity and the significance of types of higher nervous activity in the development and the course of some pathological processes, including those of inflammation, and in the restoration of impaired functions. This work will be done by the Institute of Physiology, the Institute of Experimental Medicine, The Institute of General and Experimental Pathology, morphological laboratories, and the Institute of Surgery imeni A. V. Vishnevskiy.

3. The significance of neurogenic factors in the mechanism of immunity produced in some infectious diseases, for instance influenza, diphtheria, dysentery, and tetanus. This work will be done by the Institute of General and Experimental Pathology, the Institute of Infectious Diseases, the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, and the Institute of Virology imeni Ivanovskiy.

4. The effects of therapeutic sleep and of narcosis on the course of some infections.

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5. The role of higher divisions of the nervous system in the mechanism of the action of some pharmacologically active substances and antibiotics. This work will be done by the Institute of Pharmacology, Antibiotics, Chemotherapy, and Chemoprophylaxis of Infectious Diseases.

The plan includes development of experimental models of infectious miocarditis, coronary insufficiency, gastrointestinal ulcers, and rheumatism.

Work on the physiology and pathology of respiration and blood circulation and on the physiology and pathology of digestion has also been planned.

During recent years, many new drugs and antibiotics have appeared, e.g., albomycin, synthomycin, levomycetin, p-aminosalicylic acid, phthivazid, cardiac drugs, anesthetics, drugs with curare activity, and blood anticoagulants. However, the results which have been already achived do not satisfy the greatly increased demands of practical medicine for new and more efficient chemotherapeutic agents and antibiotics to treat various infectious diseases such as influenza, dysentery, whooping cough, scarlet fever, and rheumatism; cardiovascular diseases; diseases of digestive organs; disturbances of metabolism; blood diseases; and disturbances of the regulation of endocrine activity. A wide range of new drugs which have a selective action on various subdivisions of the central nervous system is urgently needed. Greatly needed are new drugs for combating various local manifestations of tuberculosis and different forms of this disease. It is necessary to develop new anesthetic and analgesic agents for therapeutic, surgical, obstetric-gynecological, and pediatric practice.

Investigations along these lines are already being conducted, and work that will be done in this field during 1953 has been planned. This work will henceforth be done on a more substantial production basis as a result of the organization of the new Institute of Pharmacology, /Antibiotics/, Chemotherapy, /and Chemoprophylaxis/ of Infectious Diseases within the Academy of Medical Sciences USSR.

Soviet physiologists, pathophysiologists, and immunologists have begun to review the theory of specific and nonspecific immunity (including problems pertaining to the mechanisms of allergy and of sensitization) from the standpoint of new physiological principles. Application of I. P. Pavlov's physiological teachings has led to the recognition that regulation of immunogenic processes is subject to the same basic physiological laws as the regulation of blood circulation, respiration, digestion, or metabolism. In other words, this regulation is effected by the higher divisions of the central nervous system. Past work, as well as recent work, has demonstrated the possibility of duplication by reflexes in general as well as by conditioned reflexes in particular of phenomena of cellular and humoral immunity. The role of reception and of the summation of irritations in the infection process and in immunogenesis has been clarified.

The work planned for 1953 in the subdivision of infection and immunity comprises investigations on the role of regulation by conditioned reflexes in the formation of antibodies and in the phagocytic reaction, as well as on the significance of the condition of higher nervous centers for the development of immunity, including the effect of reception, of cortical inhibition, of the time factor, and of supplementary irritations (specific and nonspecific) on the development of immunity.

The special problem of devising new methods for the early and rapid serological diagnosis of infectious diseases requires particular attention.

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The April 1952 conference devoted to problems of cellular and noncellular living matter recognized the importance of the work done by O. B. Lepeshinskaya and her collaborators in this field. The work done by Lepeshinskaya's group dealt with the significance of the growth of living matter not only during the formation of cells, but also during their division; the significance of various new structure-forming processes taking place in noncellular living matter; participation of living matter in the formation of cancer cells; and the effects exerted by higher subdivisions of the central nervous system on the multiplication of cells. Investigations carried out at other laboratories besides that headed by Lepeshinskaya established the possibility of the formation of cells from noncellular matter in plant life, the spontaneous formation of nuclei in bacterial cells and in muscle fibers of warm-blooded animals, the significance of some plasmatic /protoplasm/ structures for the development of lax (spongy) connective tissue, and the significance of some noncellular symplastic formations for the development of lung tissue in the healing of injuries.

The Conference on Cellular and Noncellular Living Matter noted that reorganization of research work in cytology, histology, embryology, microbiology, pathology, and biochemistry has not proceeded fast enough in a number of institutions. In accordance with the recommendations of the conference, work on the following subjects will be done during 1,53 in the subdivision of development and origin of living matter under normal and pathological conditions: the role of noncellular living matter in the formation of various cells and tissues in the course of onthogenesis, in processes of regeneration, and in processes of the restoration of tissues and organs; also in hybridization, heredity, and the origin of sex cells. An important subdivision of research in this field will be devoted to a study of the development of malignant tumor cells from living matter in laboratory cultures and in the organism and to further investigations of influences exerted by the nervous system on the development of living matter in the whole organism. During 1,53, eight institutes of the Academy of Medical Sciences USSR, five institutes of the Academy of Sciences USSR, the University of Leningrad, and chairs of 12 higher medical educational institutions will participate in the extremely important work on the development and origin of living matter.

In the field of morphology, the following work has been planned for 1953 and is in part already being conducted:

1. Morphology of the central nervous system, particularly of the cerebral cortex, from the standpoint of evolution and in the light of I. P. Pavlov's theory of analyzers. This work will be done at the Institute of the Brain, Ministry of Public Health USSR.

2. Investigation of the morphological methods of study of the most important diseases (arteriosclerosis of coronary arteries of the heart, bronchoectatic disease, etc) with the aid of biological models. This is being done at the laboratory directed by Academician N. N. Anichkov.

3. Histomorphological and experimental investigations on the morphophysiology of blood vessels of the cerebrum (B. N. Klosovskiy, Corresponding Member of the Academy of Medical Sciences USSR).

4. Morphology of receptors of internal organs and of the cardiovascular system under normal and pathological conditions (N. G. Kolesov, Corresponding Member of the Academy of Medical Sciences USSR).

5. Functional anatomy of intraorgan blood vessels and lymphatic vessels, in connection with a review of the subject of the structure of organs on the basis of results obtained by means of stereomorphological data (group headed by D. A. Zhdanov, Corresponding Member of the Academy of Medical Sciences USSR).

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Furthermore, work is being conducted on problems of innervation of the heart and of blood vessels and on many other problems in this general field.

One of the most important problems of public health and of medical science is the fight against influenza. Important achievements in the study of this problem must be credited to USSR scientists. In 1952, new vaccines for the prophylaxis of influenza were developed by A. A. Smorodintsev, M. I. Sokolov, V. M. Zhdanov, and others, and a combined preparation to be used for specific therapy and for passive immunization against influenza (A. A. Smorodintsev's serum) was proposed. Furthermore, a classification of viruses was set up and new data on the spontaneous (natural) and directed modification of viruses were obtained. This work has been done at the Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR. In addition, checking of the therapeutic and prophylactic effectiveness of influenza vaccines and of the therapeutic effectiveness of anti-influenza serum was begun on a large scale. However, all this work is still in the initial stage: public health institutions do not as yet have effective means for the prevention and treatment of influenza on a mass scale.

Notwithstanding the fact that acute catarrhs of the upper respiratory tract constitute about 50% of the diseases diagnosed as grippe [sic; influenza], the nature, pathogenesis, and diagnosis of these catarrhs have not been adequately investigated. One of the principal causes of the slow progress made in the work on influenza hitherto is the lack of coordination between work done by microbiologists and epidemiologists, on the one hand, and that done by clinicists and hygienists, on the other.

The work on influenza planned for 1953 stresses the following important special problems: general and specific prophylaxis of influenza combined with mass testing of vaccines, sera, antibiotics, and chemotherapeutic agents as well as with the development of new, more effective prophylactic and therapeutic agents; development of more efficient public and personal health measures in connection with the prevention of influenza; investigation of the etiology, pathogenesis, prophylaxis, and therapy of acute catarrhs of the upper respiratory tract; development of efficient virological, laboratory, and clinical methods for the early and rapid diagnosis of influenza; solution of the problems of pathogenesis and immunity in influenza; study of the biological properties and modifiability of the influenza virus; epidemiology of influenza in various parts of the USSR; and the epidemiology of influenza and of acute respiratory catarrhs as they affect children.

During 1952, the virological divisions of laboratories of the institutes active in this field were considerably expanded and reinforced in scientific output, equipment, and personnel. In this manner, a concrete basis for a significant advance in work on influenza has been created. In 1952, the Presidium of the Academy of Medical Sciences USSR assigned additional personnel to the Institute of Virology imeni Ivanovskiy. Furthermore, special additional personnel were assigned to this institute by the Ministry of Public Health USSR. The Presidium of the Academy of Medical Sciences USSR also assigned additional personnel to the Division of Virology, Institute of Experimental Medicine (Prof A. A. Smorodintsev). At the Institute of Virology imeni Ivanovskiy, a modest and rather inadequate influenza clinic with 25 beds and a staff of nine persons was organized. The institute imeni Ivanovskiy has been made responsible for the entire work on the problem of influenza.

In connection with the progress of research in the field of virology, it is intended to introduce into practical use vaccines against tick encephalitis and Japanese encephalitis, to develop a live vaccine against sandfly (pappataci) fever, to introduce therapy of trachoma by means of an antibiotic, to carry out work on the physiology and biochemistry of viruses, and to apply Pavlov's and

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Michurin's theories in the field of virology. As a result of special measures that have been taken, it was possible to improve planning of the work on virus and rickettsiae diseases for 1953. The principal attention and effort are being applied to the solution of practical problems of particular importance for public health, i.e., those of the treatment of infectious hepatitis (Botkin's disease), rabies, poliomyelitis, and trachoma.

Notwithstanding the successes achieved in recent years in reducing the mortality from measles, scarlet fever, and diphtheria and in decreasing the time of hospitalization necessary in scarlet fever, the fight against acute children's diseases transmitted by droplets (measles, scarlet fever, and whooping cough) remains a major problem of public health. In connection with these diseases, the following work has been planned for 1953:

1. On measles: finding a strain which has a high immunogenic capacity, developing methods for the stabilization and the most efficient application of this strain, and finding methods for the detection of the virus of infectious hepatitis in donor blood and development of methods for rendering this virus innocuous. The following institutions will participate in this work: Institute of Experimental Medicine, Institute of Pediatry, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, the Ukrainian Institute of Epidemiology and Microbiology imeni I. I. Mechnikov, the Leningrad Institute imeni Pasteur, the Odessa Institute of Epidemiology and Microbiology, and the Moscow Institute of Vaccines and Sera.

2. On scarlet fever: development of an immunogenic nontoxic preparation of the erythrogenic toxin for the specific prophylaxis of scarlet fever; efficient therapy of scarlet fever; and development and introduction into practice of laboratory methods for the diagnosis of scarlet fever. The Institute of Epidemiology and Microbiology imeni N. F. Gamaleya will be responsible for this work. The following institutes will participate in the work: Institute of Experimental Medicine, Institute of Pediatry, Institute of Infectious Diseases of the Academy of Medical Sciences USSR, a number of institutes of epidemiology and microbiology of the Ministry of Public Health USSR, and a number of chairs of pediatry at higher educational institutions.

3. On whooping cough, work will be done in the following special fields: microbiology of organisms of the whooping-cough group and diagnosis of whooping cough; immunology of whooping cough and clinical-immunological characteristics of this disease; specific prophylaxis of whooping cough and combined inoculations against it; prophylaxis with antibiotics for the purpose of eliminating foci of infection and work on the method of passive immunization; therapy of whooping cough with antibiotics; and the epidemiology of whooping cough. The Laboratory of Children's Infections, Institute of Experimental Medicine (V. I. Ioffe), has been made responsible for the work on whooping cough. The Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, the Moscow Institute of Vaccines and Sera, the Ukrainian Institute of Epidemiology and Microbiology imeni I. I. Mechnikov, the Leningrad State Pediatric Institute, the Leningrad Institute imeni Pasteur, and a number of pediatric chairs of medical institutes will participate in the work.

Development of the most effective immunogenic preparation against diphtheria has been entrusted to the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya.

To enable the institutes to carry out the work on children's infections mentioned above, additional personnel and funds have been assigned to these institutes by the Academy of Medical Sciences USSR.

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In regard to intestinal infections, the fight against dysentery requires particular attention. During recent years, problems of the etiology, geographic distribution, pathogenesis, and regional epidemiology of dysentery have been clarified. An experimental model of Sonne dysentery has been obtained on monkeys (or apes); the bacteriological, serological, and clinical methods for the diagnosis of dysentery are improving; and problems of the prophylaxis and therapy of this disease are being studied on a broader scale. The application of synthomycin has lowered the mortality and reduced toxicoses in dysentery.

However, the principal problems of an active fight against dysentery have not yet been satisfactorily solved. The reasons for this are manifold, but the main ones are lack of coordination and the general dispersion of effort in connection with work in that field. To eliminate these drawbacks, the All-Union Scientific-Method (Nauchno-Metodicheskiy) Center for the Prophylaxis of Dysentery has been created by an order of the Ministry of Public Health USSR. The center will be based on the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya.

During 1953, research work on dysentery will be carried out with the aim of advancing the solution of the following practical problems:

1. Development of new diagnostic methods and the perfection of existing methods of diagnosis. The Leningrad Institute of Vaccines and Sera will be responsible for work on this problem, while the Mechnikov /imeni I. I. Mechnikov/, Moscow, Leningrad, Baku, Odessa, Sevastopol', L'vov, Gor'kiy, and Rostov institutes of epidemiology and microbiology will participate in the work.

2. Active immunization against dysentery. The Institute of Epidemiology and Microbiology imeni N. F. Gamaleya is responsible for work in this field. The Leningrad Institute of Vaccines and Sera, the Leningrad Institute of Epidemiology and Microbiology, the Moscow Institute of Vaccines and Sera, and the Odessa, Tomsk, Ufa, Gor'kiy, Kazan', Baku, Tbilisi, Ukrainian, and Tashkent institutes of epidemiology and microbiology will participate in it.

3. Principles, methods, and system to be applied in the treatment of dysentery. The Institute of Infectious Diseases, Academy of Medical Sciences USSR, will be responsible for the work, in which a number of clinical institutions, the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, the Tashkent, Mechnikov /imeni I. I. Mechnikov/, Sverdlovsk, Stalingrad, and Kuybyshev institutes of epidemiology and microbiology and the Tomsk and Moscow institutes of vaccines and sera will participate.

4. Development of antiepidemic measures.

5. Pathogenesis and immunity in dysentery.

Within the 1953 plan, a large part of the total effort is to be devoted to work on the prophylaxis and therapy of tuberculosis.

In connection with the problem of the prophylaxis and therapy of malignant growths, work will be advanced along the following principal lines: creation of new, more perfect methods for the early diagnosis of cancer; development of methods for the prophylaxis of cancer; investigation of precancer processes and of the therapy of these processes; the creation of more perfect methods of cancer therapy; and further investigation of problems of the etiology, immunology, and pathogenesis of cancer.

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The Institute of Therapy, Academy of Medical Sciences USSR, will be responsible for work on hypertension. The following will participate in this work: the Institute of Experimental Biology, the Institute of Nutrition, the Institute of Experimental Medicine, the Institute of Labor Hygiene and of Occupational Diseases, the Institute of the Organization of Public Health and of the History of Medicine imeni N. A. Semashko, the Sukhumi Medicobiological Station of the Academy of Medical Sciences USSR, the Institute of Physiology imeni I. P. Pavlov, the Institute of Higher Nervous Activity of the Academy of Sciences USSR, the Kiev Institute of Experimental Biology and Pathology, the Georgian Cardiological Institute, the Institute of Balneology imeni I. V. Stalin at Sochi, the Stat Institute of Physiotherapy, the Ukrainian Institute of Experimental Endocrinology, and a member of chairs of higher medical educational institutions.

In connection with the scientific aspects of the medicosanitary service at the Great Construction Works of Communism, the Academy of Medical Sciences USSR has conducted two special sessions (at Stalingrad and at Ashkhabad) on the subject during the past 1½ years. During this time, it has also dispatched 60 expeditions to construction works and has organized a special committee at the Presidium of the Academy of Medical Sciences USSR. The Stalingrad and Ashkhabad sessions have shown that a more extensive and more perfect organization of the collaboration between scientific institutions and public health organs is needed in matters affecting medicosanitary service at construction works.

In accordance with recommendations made by these sessions and by the Ministry of Public Health USSR, the following extensive program of activities in this field has been outlined for 1953:

1. Investigation of the sanitary condition of the reservoirs being transformed, and modification of the properties of water in new reservoirs from the standpoint of economic uses, household needs, and drinking.

2. Investigation of problems connected with the sanitary preparation of future reservoirs and with the general improvement of their banks.

3. Scientific investigations on the planning and improvement of new towns and settlements.

4. Hygienic preparatory work and sanitary organizational planning in connection with the transfer of towns and villages to new locations.

5. Studies of labor hygiene at construction works.

6. Work on nutrition, preservation of foodstuffs in a hot climate, and prevention of food intoxications.

7. Work on measures for the prophylaxis of intestinal diseases, children's diseases, diseases with a natural reservoir due to the existence of zoonoses, purulent skin diseases, angina, influenza, etc. In addition, the incidence of diseases and the state of health of the population at the construction sites will be studied.

In connection with the subdivisions of work enumerated above, specific measures will be planned. These measures will in part be introduced by scientific expeditions sent to the construction sites and in part specified in orders given by the Ministry of Public Health USSR. In view of the necessity of carrying out the work enumerated above by coordinating very closely its component parts, it is necessary to reorganize the activities of the Committee on Stalin Construction Works at the Presidium of the Academy of Medical Sciences USSR and to increase its personnel.

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The work on labor hygiene and occupational diseases planned for 1953 will be carried out by the Institute of Labor Hygiene and Occupational Pathology, the Leningrad, Gor'kiy, Sverdlovsk, Kiev, Khar'kov, Stalino, and Tbilisi institutes of labor hygiene, the Institute imeni Erisman, the industrial-sanitary divisions of sanitary-hygienic institutes, the Donets Institute of Labor Physiology, the Leningrad, Moscow, Sverdlovsk, and Kiev institutes of obstetrics and gynecology, the Institute of Therapy, the Institute of General and Experimental P. hology, the Institute of Tuberculosis, the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, the Institute of Biochemistry of the Academy of Medical Sciences USSR, and a number of chairs of higher medical educational institutions.

Work on the problem of rheumatism, anginas, and joint diseases lags as far as the following subdivisions are concerned: methods of the prophylaxis and therapy of anginas and tonsilitis, the connection of anginas and tonsilitis with rheumatism, prophylaxis and therapy of rheumatism, measures for combating the so-called occupational dystrophic arthrites, and creation of an experimental model of rheumatism. The plan of scientific work in this field to be done in 1953 has been reviewed completely by a special commission attached to the Academy of Medical Sciences USSR. This commission will apparently replace the former Antirheumatism Committee attached to the Scientific Medical Council of the Ministry of Public Health USSR. Investigations on rheumatism will be conducted in part by three republic otolaryngological institutes (those at Moscow, Leningrad, and Khar'kov), the Institutes of Therapy and Pediatry of the Academy of Medical Sciences USSR, the Moscow and Leningrad pediatric institutes, and the chairs of otolaryngology and pediatry at a number of higher medical educational institutions.

For the first time in postwar years, highly essential investigations on the etiology of rheumatism and anginas could be organized. These investigations will be carried out by special groups, which in the near future will be reorganized into laboratories of the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, the Institute of Virology imeni Ivanovskiy, and the Leningrad Institute of Experimental Medicine.

A considerable proportion of work under the 1953 plan will be devoted to the following problems: modification of microbes and the role of living matter in the development of microbes, the synthesis of proteins and their transformations in the organism under normal and pathological conditions, new antibiotics and chemotherapeutic agents, fundamental aspects of the prevention and elimination of epidemic diseases, neuropsychiatric diseases, and the fight against malaria.

The 1953 plan also, for the first time, includes work on the following subjects: school hygiene and the protection of the health of adolescents, and the most important problems of endocrinology.

An important part of the planned activities of medical science for 1953 will be scientific discussions on problems of theoretical and clinical medicine. During the past 2 years, meetings at which discussions on the following subjects were held and been organized under the auspices of the Presidium of the Academy of Medical Sciences USSR: problems of neurology and psychiatry; species formation of microbes; the development and origin of living matter (Moscow, April 1952); problems of Soviet neuromorphology (Leningrad, June 1952); and problems of arteriosclerosis and coronary insufficiency (Leningrad, October - November 1952). Furthermore, the following expanded meetings of the Presidium of the Academy of Medical Sciences USSR, sessions of departments of the Academy of Medical Sciences USSR, and other conferences and meetings were held in 1952: Expanded Meeting of the Presidium of the Academy of Medical Sciences USSR on Silicosis (October 1952); a conference of three institutes of the Academy of Medical Sciences USSR on the treatment with therapeutic sleep (June 1952); Session of the Department of Clinical Medicine on Tuberculosis (Yalta,

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October 1952); a conference on influenza (June 1952); a conference on the prophylaxis and therapy of dysentery (January - February 1952); and an expanded meeting of the Presidium of the Academy of Medical Sciences USSR at which the problem of the nutrition of industrial workers was discussed. Discussions on the following problems have been planned for 1953:

1. Contemporary problems of the ideological fight for Pavlov's teaching and against the vulgarization of this teaching (an expanded meeting of the Presidium of the Academy of Medical Sciences USSR).

2. Fundamental problems of the theory of Soviet public health in the light of the decisions of the 19th Congress of the Communist Party of the Soviet Union.

3. I. P. Pavlov's teaching as a scientific basis for the prophylactic trend in Soviet medicine.

4. Fundamental problems of immunity in the light of I. P. Pavlov's teaching.

5. Fundamental problems of the etiology, pathogenesis, and immunology of cancer.

6. Hygienic standards and their physiological foundation.

7. Types of higher nervous activity of human beings.

It is expected that a number of results of scientific research will be introduced into public health practice during 1953. Some of the results and measures to be applied in practice are as follows: approval for use of vaccines for the prophylaxis of influenza on the basis of data obtained in actual epidemiological experience; approval for use of a combined anti-influenza therapeutic serum on the basis of data obtained under the same conditions; development of a vaccine for active immunization against measles and testing of this vaccine under actual epidemiological conditions; evaluation and transfer into practice of the best methods for the diagnosis and treatment of whooping cough; transfer into practice of laboratory methods for the diagnosis of scarlet fever.

Also, introduction into practice of an improved preparation for the prophylaxis of diphtheria; preparatory work on new bacteriological methods for the diagnosis of dysentery; introduction into industrial production of the antituberculosis drug pathivasid; the development of production methods for biomycin and introduction of this antibiotic into therapeutic practice; summarization of final results on the application of synthomycin for the treatment of trachoma; improvement of the technology of the production of penicillin, streptomycin, and albomycin; standards for hygienic measures to be applied at textile construction works; development of methods for the production of preparations to be used for parenteral protein nutrition; prophylactic diets for workers in various branches of industry; development of scientific methods for the treatment of hypertension at dispensaries; approval of indications and contraindications for the application of sleep therapy in the treatment of cardiovascular diseases and of gastrointestinal ulcers; creation of a scientific basis for a new classification of different forms of tuberculosis; development and introduction into practice of instructions for the therapy and prophylaxis of anginas (and tonsillitis), rheumatism, and diseases of the joints.

During a short period following the Sixth Session of the Academy of Medical Sciences USSR, a number of experimental models of diseases were created with the help of which basic problems of pathogenesis and therapy are being

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studied. These diseases include paratyphoid, focal pneumonia, Sonne dysentery, [combined?] focal and lobar pneumonia, atophan [i.e., cinchophen] ulcer of the stomach, tuberculosis of the bones and joints, diphtheria intoxication, whooping cough, whooping-cough pneumonia, arterial hypertension, trophic ulcers, chronic tuberculosis of internal organs, and osteomyelitis. It is intended to devise, during 1953, experimental models of neuroses, arteriosclerosis, hypertension, coronary insufficiency and myocardial infarction, gastrointestinal ulcers, gastritis, cholestitis, colitis, rheumatism, pulmonary tuberculosis, etc.

The distinguishing features of the 1953 plan are as follows:

1. Greater attention to theory from the standpoint of Marxism and of Pavlov's physiological teaching.

2. Emphasis on the prophylactic trend.

3. Closer attention to practical applications.

4. Experimental work leading to application of the principles of Sechenov's, Botkin's, and Pavlov's nervism in clinical medicine.

5. Closer coordination [of scientific work and practice, etc.]

6. Better planning and clearer definition of responsibility.

The chief shortcomings of the plan are the lack of uniform care with which various problems have been prepared and formulated, the lack of precise definition of the actual work to be done on some problems, and the shortage of personnel. One of the principal difficulties in the way of realization of the plan is lack of contact between institutions, groups, and individual scientists. Commissions for the study of problems, directors of institutes, scientific medical councils, and the Presidium of the Academy of Medical Sciences USSR must take decisive steps to overcome the above-mentioned shortcomings and difficulties which might impede the plan.

Many fundamental shortcomings in the planning of scientific work and in the organization of science are due to lack of scientific criticism from below and lack of self-criticism. A greater amount of constructive criticism should be advanced.

The system of planning the work to be done without making corresponding provisions for the training of personnel has led to a very difficult situation in several fields of medical science, e.g., physiology, pathophysiology, pharmacology, virology, pediatry, therapy, hygiene, and biochemistry. It is necessary to create immediately a plan for the training of personnel and to improve the system of training through aspirantships, doctorships, and internships. Furthermore, the Academy of Medical Sciences USSR does not have adequate clinical facilities. The lack of these facilities impedes work in such fields as pediatry, neuropsychiatric diseases, and rheumatism. The Academy of Medical Sciences USSR regards building of an academic clinical city as the proper solution of this problem.

The work of commissions for the study of problems and of the leading research institutes must be improved and the contacts between the Academy of Medical Sciences USSR and the corresponding administrations of the Ministry of Public Health USSR must be strengthened. The serious shortcomings in the direction and control of scientific research which exist in regard to both the Academy of Medical Sciences USSR and the Scientific Medical Council of the

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Ministry of Public Health must be overcome. The Presidium of the Academy of Medical Sciences USSR, the bureaus of departments, and the heads of institutes must be made responsible for the work being done and for the application of the results of this work in practical medicine. The results should be evaluated on the basis of the completion of concrete assignments and of help rendered to the public health service of the country rather than merely on the basis of reports. In other words, direction and control must become operational.

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